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Docket No.: 05407/100J328-US1  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Daryl Real et al.

Application No.: 10/087,198

Art Unit: 1614

Filed: March 1, 2002

Examiner: D. A. Jagoe

For: METHOD OF ENHANCING REPRODUCTIVE  
PERFORMANCE OF SOWS

**DECLARATION BY ROBERT D. GOODBAND UNDER 37 C.F.R. § 1.132**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

I, Robert D. Goodband declare as follows:

1. I am a citizen of the United States and more than 21 years of age.
2. I am one of the named inventors in this patent application, U.S. Serial No. 10/087,198. A copy of my Biographical Sketch is attached. I have reviewed the pending claims in this application. I make the following declaration in support of this application, for myself and on behalf of my co-inventors.
3. Chromium tripicolinate is the preferred chromium salt for use in the invention.
4. As shown in the Specification, on page 15 (Table V), line 30, L-carnitine and chromium picolinate when used alone show no improvement in the farrowing rate.

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5. I understand that in the Office Action dated August 31, 2004, the Examiner has rejected the claims as obvious over Samland et al, Musser et al, Trottier et al, and the J. Arthington references.

6. The Samland et al. article, Effect of L-Carnitine and Chromium Nicotinate on the Ovulation and Fertilization Rates of Gilts (1999), does not discuss the use of the combination of L-carnitine and chromium tripicolinate. The article reports finding no difference in ovulation or fertilization rates in gilts fed a combination of L-carnitine and chromium nicotinate.

7. The Musser et al. article, Effects of L-Carnitine on Performance of Gestating and Lactating Sows, Swine Day (1997), reports no improvement in the farrowing rate of sows. The article also does not suggest using L-carnitine to improve farrowing rate.

8. The Trottier et al. article, Effect of Supplemental Chromium Tripicolinate on Sow Productivity and Blood Metabolites (1998), does not discuss improving the second farrowing rate of sows. The use of the chromium tripicolinate is specifically shown not to enhance the farrowing rate in the second parity.

9. The J. Arthington article, Millennium Technologies, The Original L-Carnitine/Chromium Picolinate Supplement. How and Why it Works? (2000), discusses an experiment involving swine that are not and cannot be involved in reproduction.

10. The Musser et al. article does not suggest the use of chromium tripicolinate. The Trottier et al. article does not suggest the use of L-carnitine. The Samland et al. article does not discuss the combination of L-carnitine and chromium tripicolinate and reports no findings of enhanced reproductive performance. The J. Arthington article does not discuss enhancing reproductive performance. It is my belief that none of the references cited by the Examiner, either alone or considered collectively, would suggest to a person having ordinary skill in the art that a combination of L-carnitine and chromium tripicolinate would enhance the farrowing rate of sows.

11. The present invention also discloses an additional unexpected benefit in the Specification, page 15 (Table V), at lines 19-20 that feeding both L-carnitine and chromium

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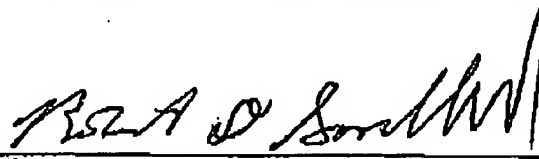
triplicate to sows increases the number of sows in estrus by days 7 and 18, respectively, after rowing.

12. I further declare that all statements made herein of my own knowledge are true, that all statements made on information and belief are believed to be true, and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under §1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the instant application or any patent issued thereupon.

Dated:

11/19/04

By:

  
Robert D. Goodband

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**Robert D. Goodband**  
**Biographical Sketch**

**Work Experience:** Kansas State University, Department of Animal Sciences and Industry

**Professor:** 2001 to present: 20% extension, 60% teaching, 20% research.  
**Associate Professor:** 1995 to 2001: 40% extension, 40% teaching, 20% research.  
**Assistant Professor:** 1989 to 1995: 60% extension, 40% teaching.

Position includes transferring technology to students and livestock producers in Kansas, conducting field research, and implementing producer education programs. Responsible for development and implementation of programs to help improve efficiency and profitability of pork producers. Undergraduate teaching responsibilities include courses in swine production, animal nutrition, and diet formulation. Teaching emphasis is on sound nutrition practices and their application as well as the science and technology applied in modern, sustainable swine production businesses.

<u>Education:</u>	<u>Degree</u>	<u>Year</u>	<u>Field of Study</u>
Kansas State University	Ph.D.	1989	Swine Nutrition
Kansas State University	M.S.	1986	Swine Nutrition
Pennsylvania State University	B.S.	1984	Animal Production

**Publications:** Author or coauthor of 101 refereed journal articles, 2 book chapters, 291 abstracts, 310 experiment station reports, and 6 patents.

**Selected Refereed Journal Articles 2001 to 2003:**

J. M. DeRouchey, M. D. Tokach, J. L. Nelssen, R. D. Goodband, S. S. Dritz, J. C. Woodworth, M. J. Webster, and B. W. James. 2003. Effects of blood meal pH and irradiation on nursery pig performance. *J Anim. Sci.* 81:1013.

Dritz, S. S., M. D. Tokach, R. D. Goodband, and J. L. Nelssen. 2002. An evaluation of in-feed antimicrobial regimens in multi-site pig production systems. *J Am Vet Med Assoc.* 220:1690.  
Waylan, A.T., P.R. O'Quinn, J.A. Unruh, J.L. Nelssen, R.D. Goodband, J.C. Woodworth, M.D. Tokach and S.I. Koo. 2002. Effects of modified tall oil and vitamin E on growth performance, carcass characteristics, and meat quality of growing-finishing pigs. *J. Anim. Sci.* 80:1575.

Predicala, B.Z., J.E. Urban, R.G. Maghirang, S.B. Jerez, and R.D. Goodband. 2002. Assessment of bioaerosols in swine barns by filtration and impaction. *Curr. Microbiol.* 44(2):136-140.

Owen, K.Q., H. Ji, C.V. Maxwell, J.L. Nelssen, R.D. Goodband, M.D. Tokach, G.C. Tremblay, and S. I. Koo. 2001. Dietary L-carnitine suppresses mitochondrial branched-chain keto acid dehydrogenase activity, and enhances protein accretion and carcass characteristics of swine. *J. Anim. Sci.*, 79:3104.

De La Lata, M., S.S. Dritz, M.D. Tokach, R.D. Goodband, J.L. Nelssen, and T. M. Loughlin. 2001. Effects of dietary fat on growth performance and carcass characteristics of growing-finishing pigs reared in a commercial environment. *J. Anim. Sci.* 79:2643.

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